

ECS Evaluation Package (EP)

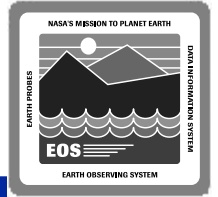
EP7 Design Review

Keith Bryant

March 20, 1996

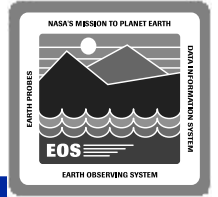
(301) 925-1126, kbryant@eos.hitc.com

Agenda



- 1:00 Overview**
- 1:15 Science Data and Scenarios**
- 1:30 Client**
- 2:00 Data Management**
- 2:30 Advertising**
- 2:45 Data Server**
- 3:00 Management Subsystem**
- 3:15 Integration and Test**
- 3:45 Wrap-up**
- 4:00 Adjourn**

Presenters



Keith Bryant, Overview

Ed Dombrowski, Science Office

Kevin Limperos, Client Subsystem and X/Motif Client

Show Chen, Web Client

Lynne Case, Data Management Subsystem

Lynne Case, Interoperability Subsystem

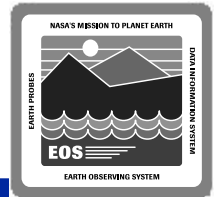
Evelyn Nakamura, Rel A Document Data Server

Mike Burnett, Rel A Science Data Server

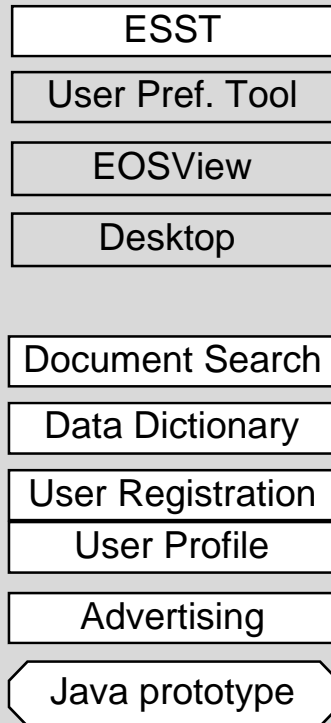
Ed Feinstein, Management Subsystem

Perry Miranda, I&T

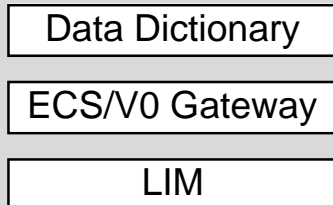
Summary of EP7



Client



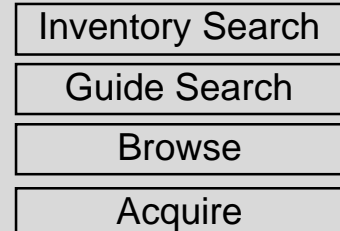
Data Management



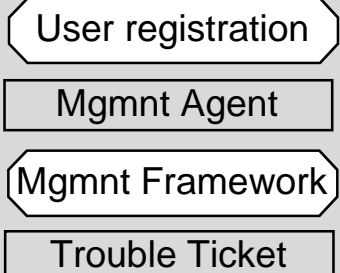
Interoperability

Advertising Service

Data Server



Management



Communications



Evaluations

Usability Testing
with Science Users

Survey
of Science Users

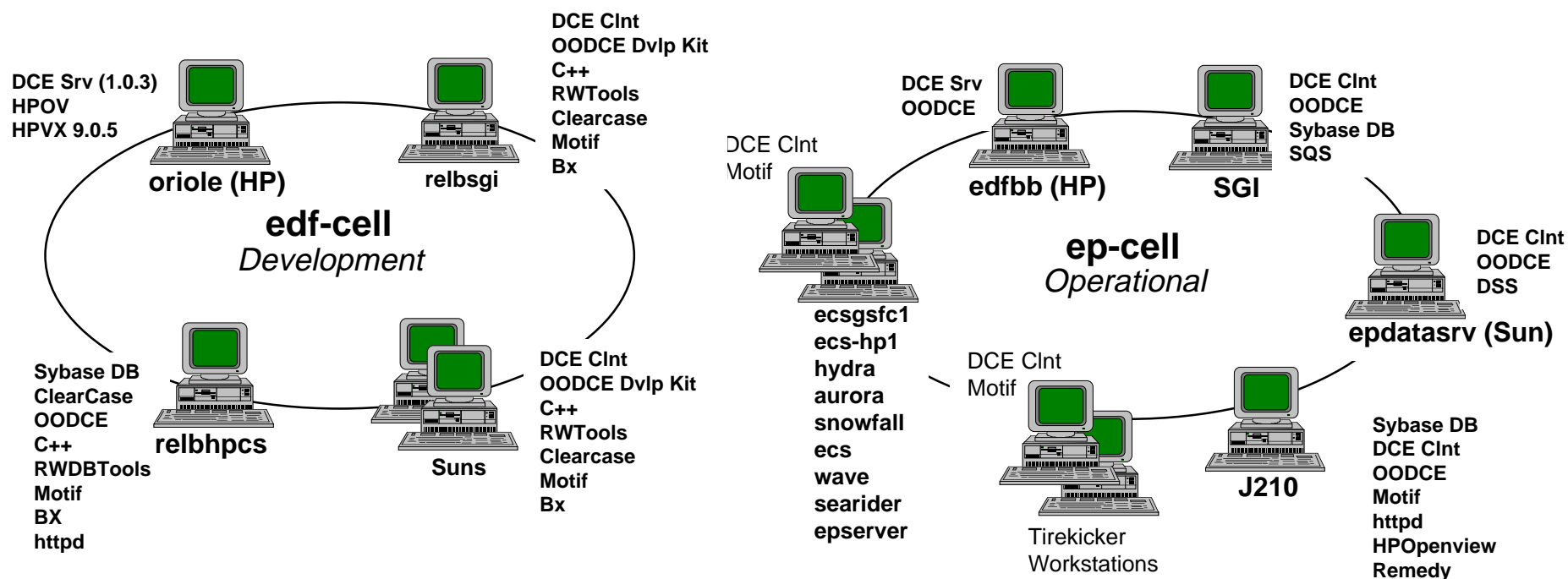
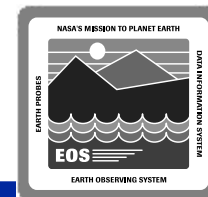
Increment

Prototype

Re-use

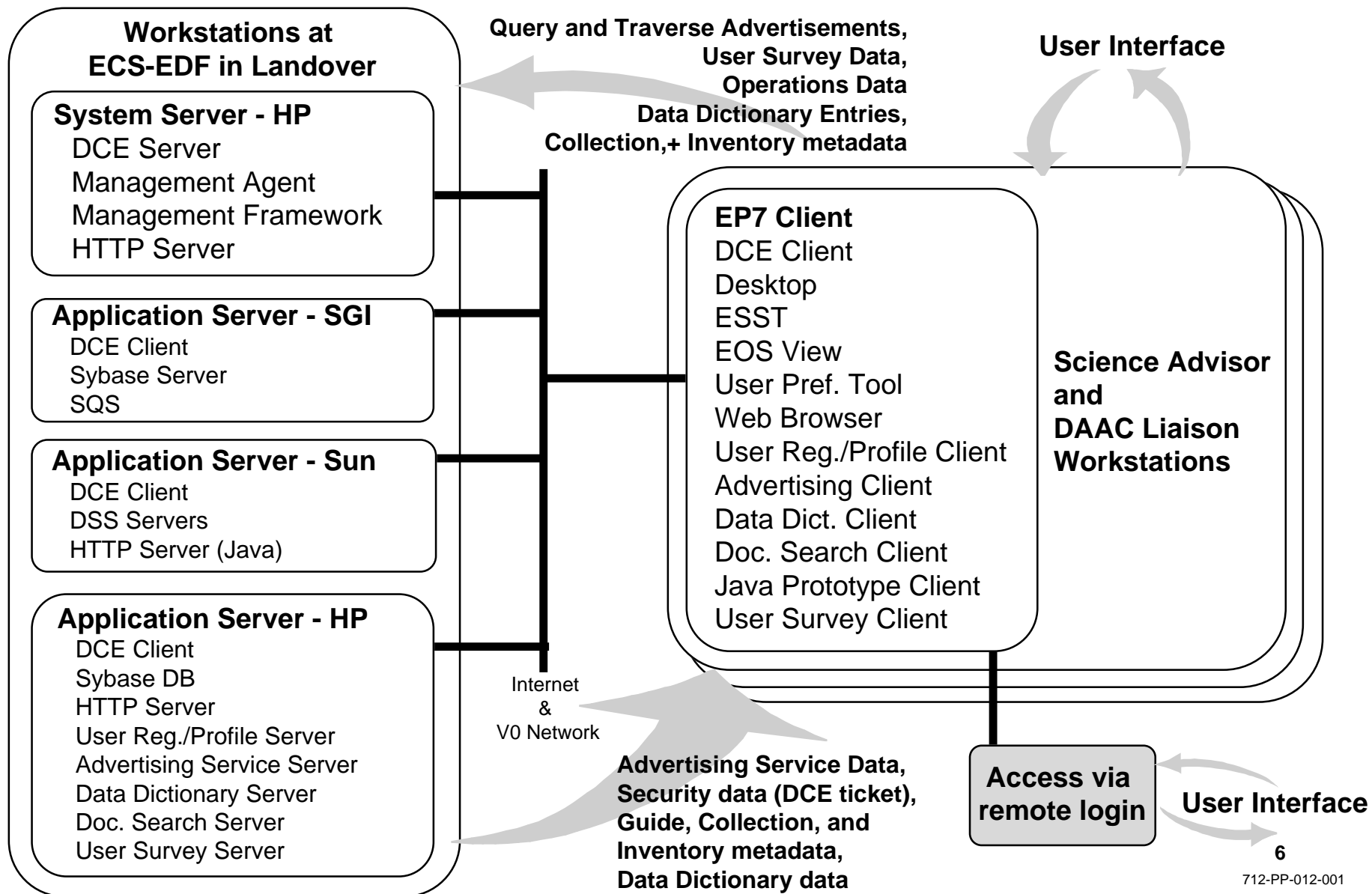
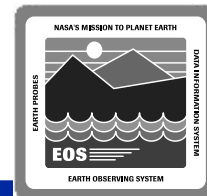
Legend

Configuration

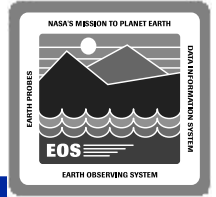


- **Development - edf cell**
 - Servers at Landover (oriole, J210,.....)
 - Development & clients (dvlprs workstations)
- **Operational - ep cell**
 - Servers at Landover facilities (J210, epdatasrv, SGI, edfbb...)
 - Clients at each DAAC (DAAC Liaisons workstations)

Configuration (Contd.)

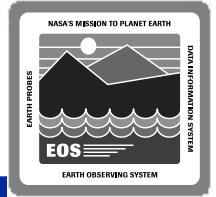


Hardware, Sizing & Maintenance



- **Platforms**
 - HP 9000/715/735 - HP-UX 9.0.5
 - SUN Sparc - Solaris 2.4
 - SGI - IRIX 5.3
- **EP7 Client Size**
 - SDPS Binaries (HP) ~ 100 MB
 - CSMS Data Logs ~ 5 MB
 - DCE 1.0.3 Binaries ~ 35 MB
- **Science Data < 9 GB**
- **Maintenance & Operations**
 - DAAC Liaisons at DAACs
 - Help Desk & Developers at Landover

EP7 Science Office Support



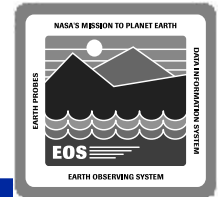
The ECS Science Office will provide the following services for EP7:

- **Tirekicker and User Community Support.**
- **Data and Metadata Capture and Ingest.**
- **Test Metadata and Data for EP7 Development Teams and I&T.**
- **EP7 Internal (I&T cycle) and External (Usability) Testing.**
- **EP7 Web Page (<http://ecsinfo.hitc.com/ep7/ep7.html>).**

and

- **On-going Support for EP Client/Server Design and Development.**

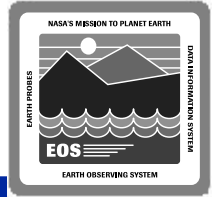
Data and Metadata Capture



- **Current ECS Test Metadata and Data Holdings**

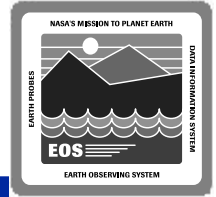
Package	Data Sets Introduced
PW1	AVHRR 09ANGB 1D AVHRR 09ANGL 1Y CAC SST EDC Global 1 km Data Set Halpern Atlas MCSST CDROM Miami MCSST Miami MCSST Nighttime
EP6	EDC Global 1 km Data Set- North America, 1 km AVHRR 10-day composite NDVI ERBE S-4G scanner 2.5 degree regional averages ISCCP_C2
PW2	TOVS Pathfinder C1 MSU Daily AM (CH 2/3, CH 4, Ocean Precip) SSM/I Wentz Geophysical Products from DMSP-F10 TOVS Pathfinder C1 MSU Monthly AM (CH 2/3, CH 4, Ocean Precip) TOVS Pathfinder C1 MSU Pentad AM (CH 2/3, CH 4, Ocean Precip) MSU Daily Precipitation with LIM93 correction Wallis, Lettenmaier and Wood Hydroclimatology Jaeger Monthly Mean Global Precipitation SSM/I Wentz Antenna Temperature from DMSP F8

Data and Metadata Capture (cont'd)



- **Proposed Additions:**
 - **Parameter rich sets.**
 - **Extended metadata (data specific attributes).**
 - **Some V0 migrated data sets.**
 - **Simulated metadata.**
 - **Additional data products for browse and order.**
- **Some proposed selections:**
 - **Simulated AM-1 Metadata (MODIS, SAGE).**
 - **V0 Migrated sets as available.**
 - **LIS test data, SIRC (EDC).**
 - **Additional data sets from each DAAC, migrated for EP7.**

Data Ingest Plan

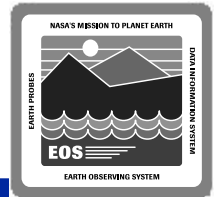


- Review current holdings for selection and migration to the new EP Data Server.
- Define common core and extended metadata attributes for EP7 based upon data restrictions and EP7 search capabilities.



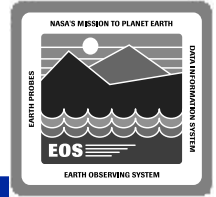
- Capture collection and granule level metadata and some additional data products for order (i.e. some more swath data).
 - Refine metadata attributes as necessary.
 - Define Valid mappings for the DM sub-system.
- Provide test metadata and data products for the Client and DM sub-systems and I&T.

Attribute Mapping Example



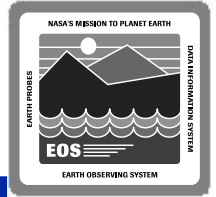
Common Core Metadata (EP6, PW2 Baseline)	Data Specific Metadata (SIRC Data)
Collection Name	Radar Mode Acquisition Mode
Processing Level	Pulse Repetition Frequency
Parameter Group	Data Sample Quantization
Parameter Topic	CEOS Tape ID
Locality Type	SAR Processing S/W Ver.
Locality Name	.
Temporal Range Type	.
Beginning Time	.
Beginning Date	
Ending Time	
Ending Date	
Data Originator	
Instrument Type	
Sensor Type	
Sensor Name	
Platform Name	
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ECS Common Repository



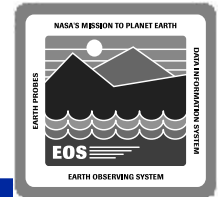
- **ECS will set up a common repository for all test data and metadata holdings. This will support:**
 - **EPs**
 - **PWs**
 - **Release Specific Testing**
 - **The ECS Technology Transfer Testbed (ET3)**
- **EP7 Ingest procedures will be used as a common thread for all future data capture and ingest.**

EP7 User Scenarios



- **New EP7 scenarios will be created in order to match EP7 data holdings with EP7 functionality. On-line web walk-throughs will be provided.**
- **EP6 scenarios, such as the Sugarland Run scenario, will be extended to include new EP7 capabilities.**
- **The scenarios will focus on the following key EP7 features:**
 - **Search Services (Common Core Metadata and Extended, Guide, Coverage Service, LIM / Gateway access)**
 - **Data Dictionary Service**
 - **Advertising Service**
 - **EOSView / Browse**
 - **Limited Data Order (FTP only)**

Additional EP7 Features



- **EP7 Internal Science Office Testing**

In addition to post deployment usability testing, the Science Office plans to perform build evaluations in concert with I&T testing.

- **EP7 Web Page**

URL: <http://ecsinfo.hitc.com/ep7/ep7.html>

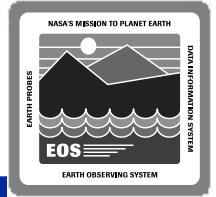
New 'EP7 User Forum' - Tirekicker/ECS on-line communication service; includes search mechanism.

EP7 Documents (OR, DR, etc.)

Key status and events for Tirekickers and the User Community.

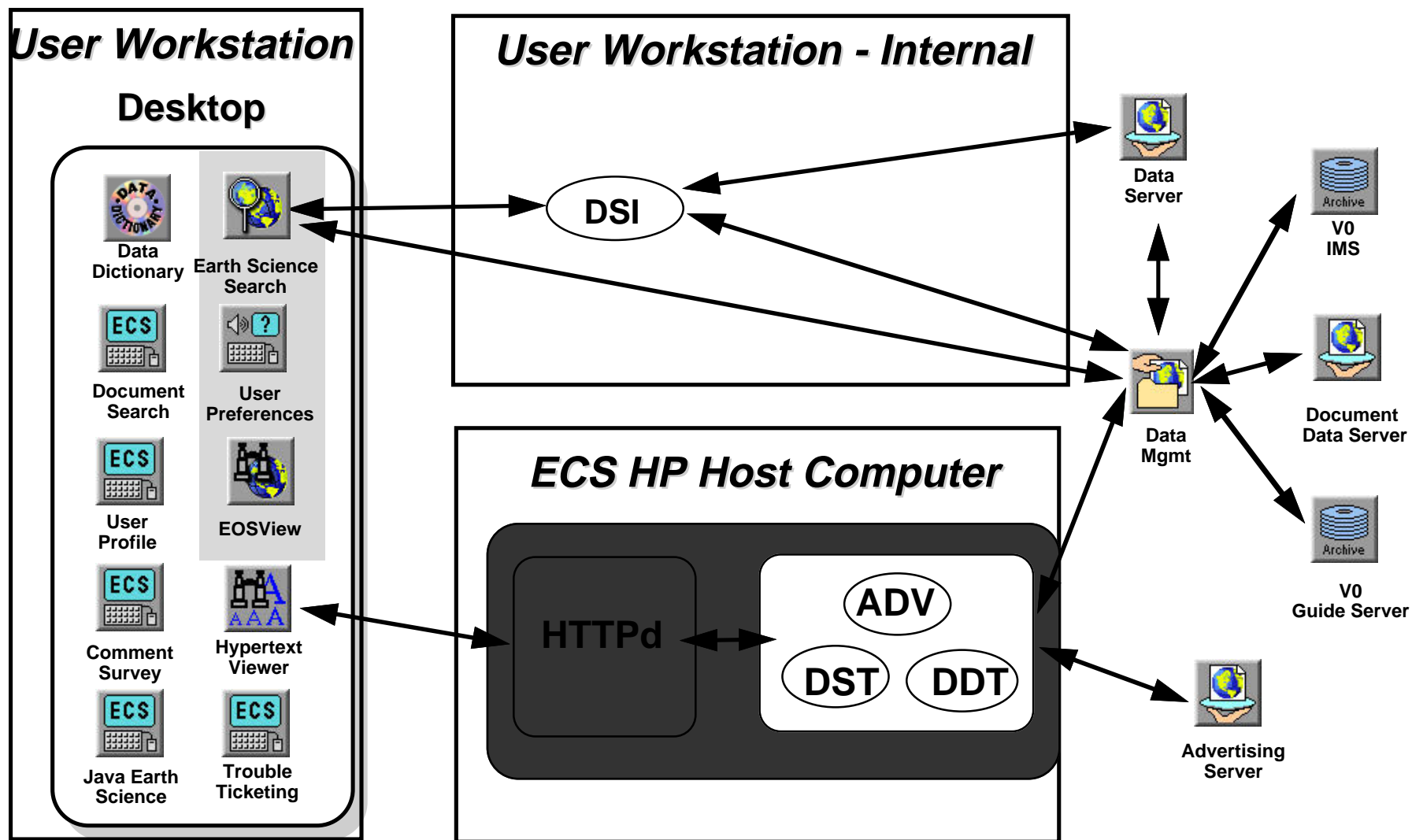
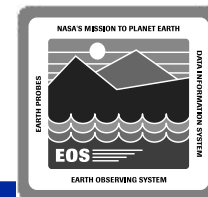
Other links (i.e. EP7 Client Design Page).

EP7 CLS Contents

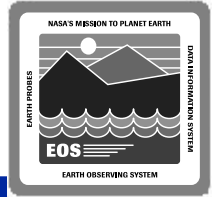


- **X-Windows Tools**
 - Earth Science Search Tool (ESST)
 - User Preferences Tool (UPT)
 - EOSView
 - Desktop
- **HTML Tools**
 - User Registration Tool (URT)
 - Data Dictionary Tool (DDT)
 - Comment Survey Tool (CST)
 - Java Earth Search Tool (JEST)
 - Document Search Tool (DST)
 - Trouble Ticketing (TT)

EP7 X/Motif Client Architecture

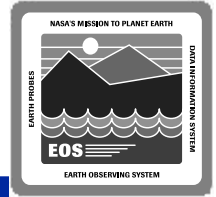


What ESST means to you in EP7



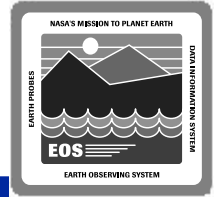
- Multiple Independently Runnable Searches.
- Guide Searches from Search Screen.
- Integrated Timeline and Map.
- Granule Coverage Display.
- Product Specific Metadata Attributes which grey-out when invalid.
- V0 Metadata Exception Warning.
- Valid value process prevents creation of invalid queries to the V0 System.
- Pull-down dialog box for hyper-valued attributes.
- Load and Save Searches and Results Sets.
- Results Reaggregation by whatever attributes you want.
- Context passing from Advertising Service.

Multiple Independent Searches



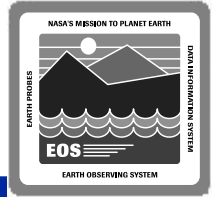
- **There is no limit to the number of searches which can be simultaneously initiated.**
- **Search criteria are entered and the 'Submit Search' button is pressed.**
- **Notification is provided as search results arrive for different searches.**
- **A window-switching mechanism allows viewing a selected results set in one physical results window.**

Guide Search



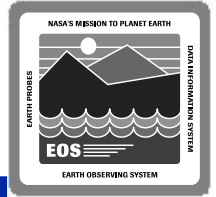
- **Performed from the Search Screen.**
- **The “Search Type” option menu must be set to “Guide”.**
- **The WWW browser is launched and passes the Guide Search URL to the ECS Document Data Server CGI application.**
- **Results of the Guide Search are shown in the Web Browser.**

Integrated Timeline and Map



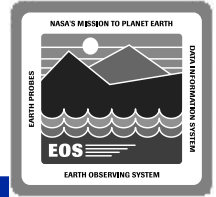
- An all new timeline and map are being implemented with Hughes Delphi and STK/PL software.
- The timeline and map will always be displayed together. In the future (post-EP7, but release-B timeframe), selections on the map will automatically affect valid time ranges shown on the timeline.
- New features will include:
 - Panning and zooming
 - Potpourri of projections which can be displayed
 - Regions selectable from a pull-down menu
 - Points, polygons, circles can be used to select regions
 - WDB-II database used (includes rivers, political boundaries)

Granule Coverage Display



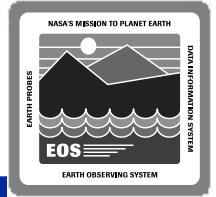
- The new map will be used to display granule coverage for granules selected from a results set on the Results Screen window.
- The timeline will simultaneously show temporal coverage for the selected granules.
- This feature is an entertaining way to perform coincidence assessment.

Product Specific Attributes



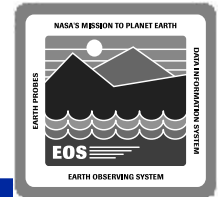
- **New attributes specific to certain collection(s) will be added for EP7.**
- **When selections of valid values for other attributes are inconsistent with a product specific attribute, the product specific attribute will be greyed out. Conversely, when a product specific attribute selection is made, inconsistent valid values for other attributes will be greyed out.**

Metadata Exceptions



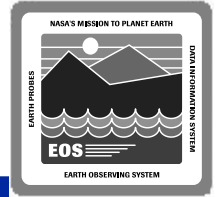
- A warning dialog will alert the user when a search contains criteria which inhibit its transmission to the V0 system.
- The warning dialog will appear upon selection of the valid value; the dialog box can be deactivated for future occurrences.

Dialog for Valid Value Selection



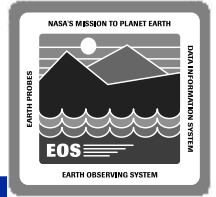
- **Some attributes (e.g. parameter) have a large range of potential valid values. For such attributes, a dialog box will be used to display the valid value choices.**
- **The dialog box will contain a scroll bar and Find box. The find box allows text entry of characters in the valid value of interest. The list will automatically scroll as characters are entered.**

Load/Save Searches and Results



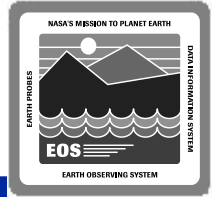
- Load and Save Searches is performed on the Search Screen.
- Load and Save Results is performed on the Results Screen.
- When a Results Set is saved, the corresponding search is also saved with it.
- In EP7, as a consequence of Data Server limitations, no service can be invoked on granules loaded from a saved result set without re-running the original search.

Results Set Reaggregation



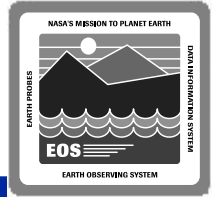
- Reaggregation allows displaying a Results Set in a manner which is consistent with how the user is thinking about the data, not how it is grouped by default.
- The default aggregation is by Collection Name.
- The default may be changed to any desired combination of attributes.
- The attributes are selected for the Aggregation via the Attribute Icon Selection Tool.
- The reaggregation Option on the Results Screen changes the displayed aggregation.

Context Passing from Advertising Service



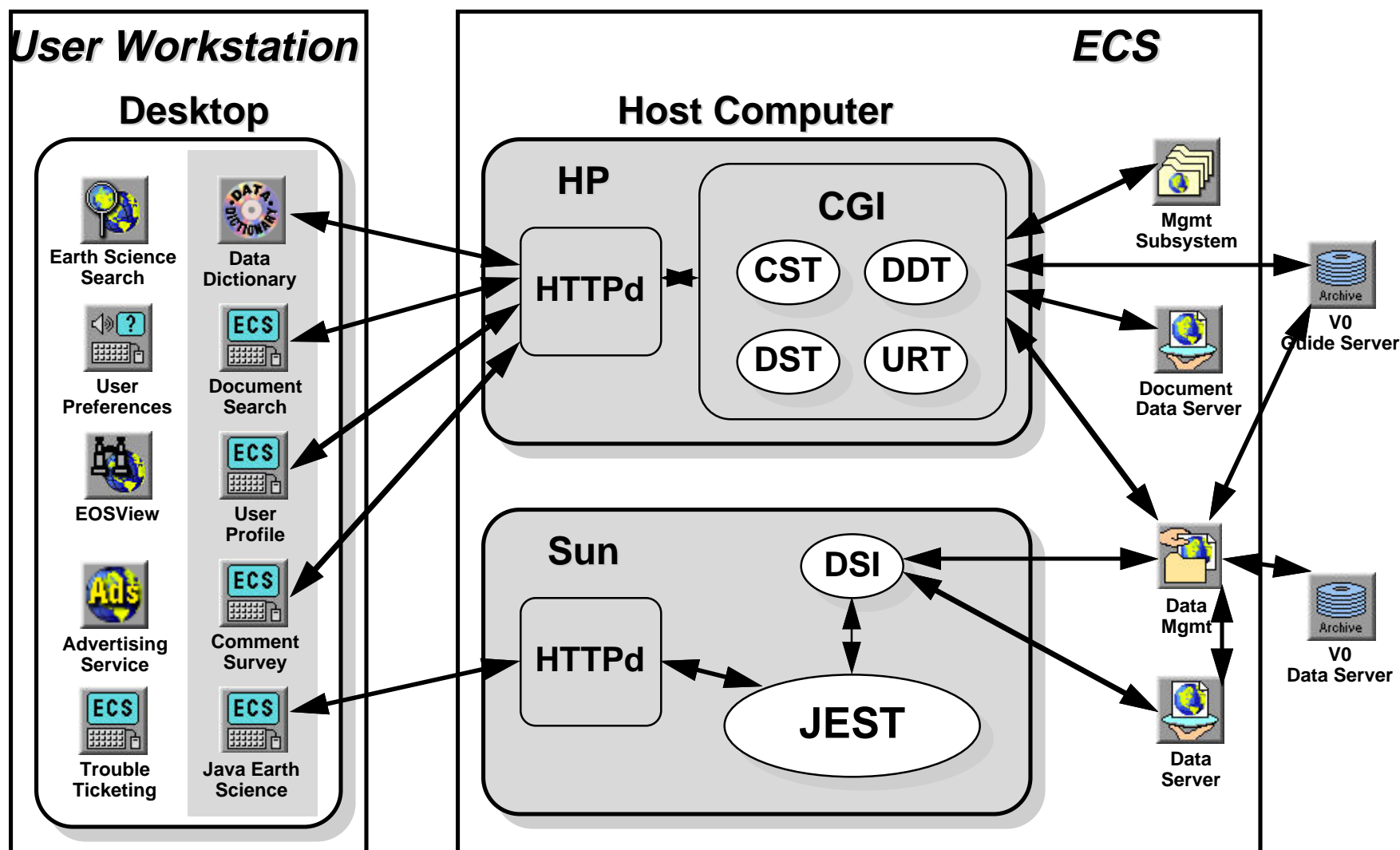
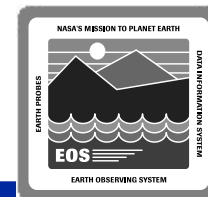
- The data collection and service context will be passed from the Advertising Service to the ESST following selection of the Search or Order buttons on the advertisement page.
- If the Search button is selected on the advertisement page, the ESST is activated with the associated collection name already selected as a search criteria.
- Due to Data Server limitations, the Order button will not automatically initiate the ESST on the results screen. For EP7 it will work exactly as the Search button.

EP7 Web Client New Features

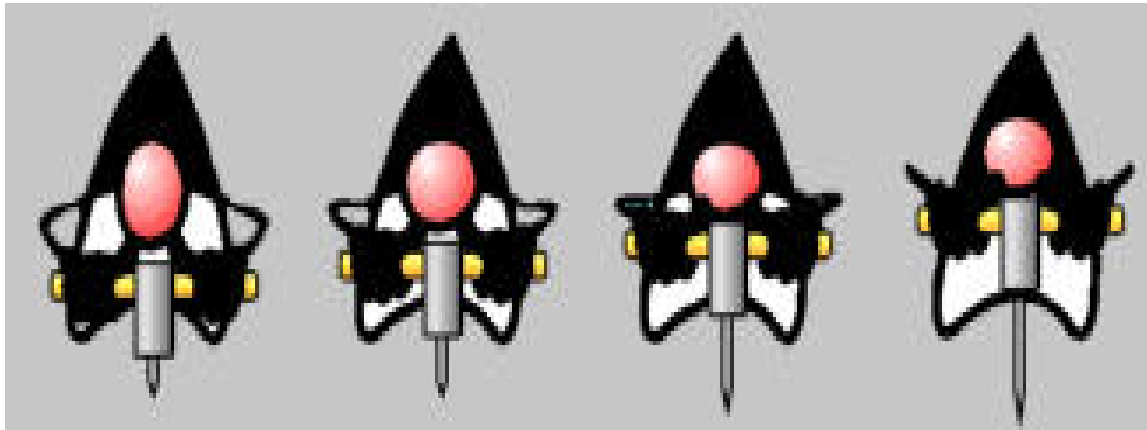
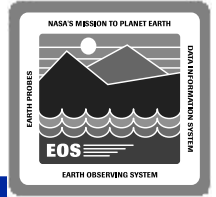


- **Java Earth Science Tool (JEST)**
 - End-to-end capabilities: search, results, browse, acquire
 - User states and sessions management: save/retrieve search and results
 - Dependent valids
- **Document Search Tool (DST)**
 - Guide Search, via LIM, to DDSRV and V0 Guide Servers
 - Keyword searches only
 - Supported document formats: ASCII, HTML, (PostScript, PDF, RTF)
- **Other Web Clients**
 - Aliases - Data Dictionary Tool (DDT)
 - Requested Access - User Registration/Profile Tool (URT)
 - Display timestamp and software version id - Comment Survey Tool (CST)

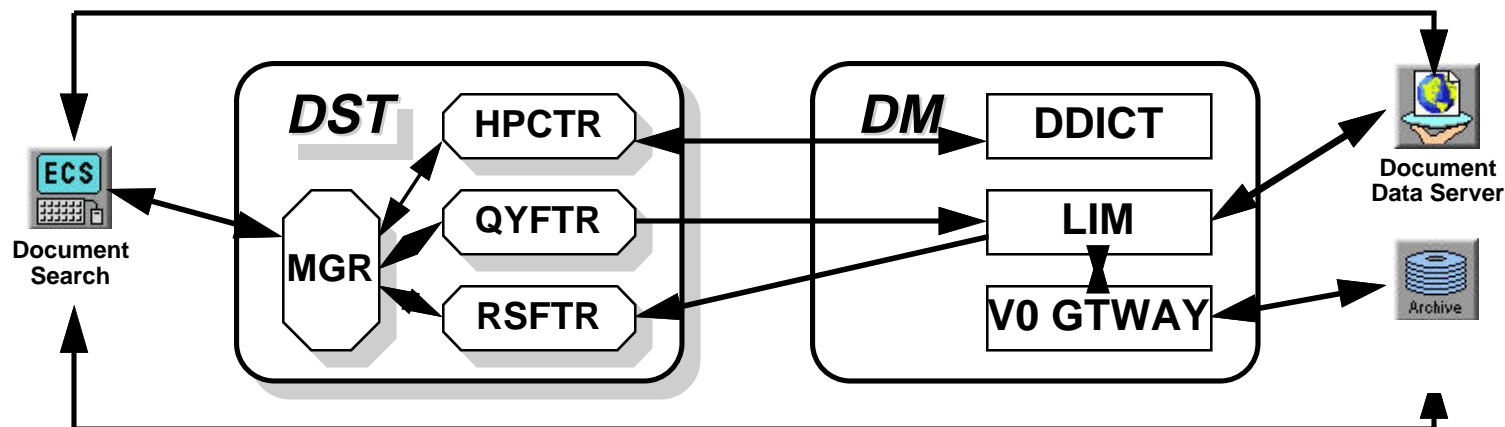
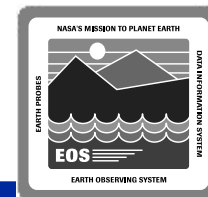
EP7 Web Client Architecture



EP7 JEST Detailed Design



EP7 DST Detailed Design



MGR - Manager

- receives and parses HTTP requests
- controls different DST actions
- sends results to the Web browser

HPCTR - HomePage Constructor

- retrieves valid lists from DDICT
- builds the DST HomePage

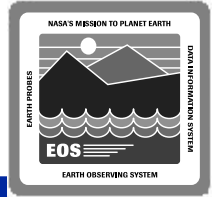
QYFTR - Query Formatter

- validates user search queries
- builds the query to a GIParameterList object
- submits the search query to LIM

RSFTR - Results Formatter

- receives results from LIM
- consolidates the results hit lists

EP7 Web Client Baseline



- **Web Technology Baseline**
 - HTTP 1.0
 - HTML 3.0
 - CGI 1.1
 - Java JDK 1.0.1
 - JavaScript 1.0
- **Web COTS Baseline**
 - Netscape Enterprise/Commerce Server 2.0
 - Netscape Navigator 2.0.1
 - Mosaic 2.7